

III. REMARKS

Claims 1-7 have been amended.

The purpose of the amendments is to clarify the claims and to better point out the substantive features of the present invention without limiting them. Among these features are the use of a combined signal and its transmission via common coupling means. Combining signals and feeding them via a common coupling means according to the present invention is not disclosed in the prior art, nor is the antenna arrangement according to the present invention. For example, the prior art does not disclose a new holder according to the amended claim 7.

Talvitie et al does not relate to the act of combining two signals and feeding the two signals into two antennas by filtering. The antenna 40 presented in Talvitie et al is not an external antenna in the sense of the invention. The antenna is a conventional, integrated antenna which is attached to the communication unit 50. In the present invention, the corresponding antenna is shown in Fig. 1 (antenna 13), and in addition, there are external antennas 14, 15. Moreover, in Talvitie et al, the antennas 30 and 40 are not used at the same time. Therefore there is only one antenna means, external or integrated, in use at each time, and thus, combining or filtering signals of two frequency ranges as presently claimed is not possible. The antenna means 30 or 40 use the same frequency range.

The antenna 104 presented in Sointula is not an external antenna in the sense of the present invention. The antenna is a conventional, integrated antenna (Sointula, column 3, lines 28 to

33) which can also be placed within the unit. In the present invention, the corresponding antenna is shown in Fig. 1 (antenna 13), and in addition, there are external antennas 14, 15.

Contrary to the invention, the external antenna disclosed in Sointula, i.e., the antenna module 200, does not comprise two sets of antenna means which are both intended for at least transmission (see claims 1, 3 and 10) and at least reception (see claims 2, 3 and 10). In Sointula, the antenna is an external antenna 130 which only comprises one set of antenna means 130 for transmitting/receiving (TX/RX) signals in a single frequency range according to the prior art (Sointula, column 3, lines 41 to 46). The reception and transmission functions of the antenna 130 can be divided on different antenna wires 132, 134 (Sointula, column 3, lines 47 to 49).

In Sointula, the GSM and INMARSAT signals from the transmitter 110 may be combined in line 114, but the function of the TX filter means 124 in the module 200 is to prevent the entry of signals other than INMARSAT signals at the external antenna 130. The means 124 may also be placed within the unit 102 (Sointula, column 5, lines 36 to 38). In the present invention, in turn, the purpose of the filter means 16 is to divide the signals to two external antennas 14, 15 (claims 1 and 3). The filter means 16 are always placed outside the unit 20, which is also disclosed in the description of the methods in claims 1, 2 and 3.

In Sointula, the function of the RX filter means 128 in the module 200 is to prevent the entry of other signals than INMARSAT signals at the receiver 112 on line 116. In the present invention, in turn, the purpose of the filter means 16 is to

combine the signals from two external antennas 14, 15 (claims 2 and 3).

In Sointula, the lines 116 and 114 are separate (Sointula, Fig. 1). In the present invention, the aim is to transmit signals of different frequency ranges always combined via the same connecting means, for example, a single BNC connector. It is mentioned in Sointula (column 6, lines 12 to 18) that the lines 116 and 114 can make up a single duplex line, wherein the module 200 comprises a switch 222 or a duplexer. Also in this case, the function of the switch 222 (the combination of two signals in different directions) does not correspond to the function of the filter means 16 according to the present invention (the combination of two signals in the same direction).

In Sointula, the function of the duplexer 108 is to separate the GSM transmission and reception signals from each other and to prevent the entry of other than GSM signals at the fixed antenna 104. In the present invention, however, the function of the filter means 25 (claim 3) is to combine the signals of different frequency ranges (e.g. GSM and LPRF) or to separate them from each other by dividing, wherein the filter means 25 form a pair with the filter means 16. From the filter means 25, in turn, the signals are conducted to radio parts 11 and 12, which must each comprise, e.g., a duplexer so that the transmission and reception channels (TX/RX) could also be separated from each other in a way known as such. The duplexer 108 of Sointula corresponds to the function of said TX/RX duplexer.

In Sointula, the aim is not to transmit an unamplified signal through components with losses (connecting means), wherein it would be amplified in the antenna module 200. Another aim is to place the necessary components in the antenna module 200 to reduce the weight of the unit 102 and to make its structure simpler. These aims are not related to the way in which the antenna module 200 would be provided with several separate external antennas whose signals (amplified or unamplified) are to be combined and/or divided by filter means and connection means according to the present invention.

If the antenna module 200 of Sointula would be provided with second antenna means in addition to the first antenna means 130, this would mean doubling the components presented. Also, the internal structure of the unit would be changed, which is not presented in any way. The present invention, however, relates to developing this "double structure" further.

Consequently, in Trikha et al, the antennas 102 (fixed antenna) and 104 (external antenna) are alternative antennas, wherein the coupling of the antenna 104 to the unit 106 switches off the antenna 102 (Trikha et al, column 2, lines 10 to 19). Both antennas can receive signals of two different frequency ranges. Although both antennas (or the antennas 104 and 130 presented in Sointula) were external antennas, it is not disclosed that their signals would be combined outside the unit 106 (or in the unit 102 in Sointula), and that they would use common connecting means. However, this is what is disclosed and claimed in the present invention.

The aim in Trikha et al, in turn, is to arrange the internal structure of the unit 106 for one fixed antenna 104 and one external antenna 102 (Trikha et al, column 1, lines 63 to 67).

The basic principle is that the antenna operates in turns, not simultaneously. The antennas can function in two frequency ranges, but it is not presented that they consist of several antennas whose signals would be combined outside the unit. The present invention, however, relates to developing this antenna structure further.

It is submitted that since the problems solved by the references are so dissimilar, they cannot be properly combined. More importantly, even if the references are combined, the result is not the present invention. In particular, claim 1 now more clearly recites the combined signal and transmission via a common coupling means, which is not in the references even when combined. It is therefore submitted that the rejection of claims 1-7 under 35 USC 103 on these references be withdrawn.

For all of the foregoing reasons, it is respectfully submitted that all of the claims now present in the application are clearly novel and patentable over the prior art of record, and are in proper form for allowance. Accordingly, favorable reconsideration and allowance is respectfully requested. Should any unresolved issues remain, the Examiner is invited to call Applicants' attorney at the telephone number indicated below.

A check in the amount of \$72.00 is enclosed for additional claim fees. The Commissioner is hereby authorized to charge payment for any fees associated with this communication or credit any over payment to Deposit Account No. 16-1350.

Respectfully submitted,

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